Howard County Forest Conservation Act And You



A publication to help you see the forest through the trees.

History

In 1991, the Maryland General Assembly passed the Forest Conservation Act. This law requires local jurisdictions to reduce the number of forested acres cleared when land is developed for residential, commercial or industrial use. Howard County's Forest Conservation Program was implemented in 1993 to meet the mandates set forth in that act. To date, thousands of acres across Howard County have been protected in perpetuity through the creation of hundreds of forest conservation easements. Although some of these are located on public land, many are located on commonly owned community open space, and may also be located on private property. The easements require that the owners manage the forest to insure its long-term survival and function.



Stewardship

The purpose of this brochure is to conserve forests, encourage active stewardship and insure their long-term viability. Howard County wants to partner with you to insure we are all successful in protecting this resource. The following are guidelines and techniques that will help you in meeting the intent of the Forest Conservation Act. This publication concentrates on providing suggestions for managing these resources from a conservation perspective for wildlife, recreational and scenic uses.

Why Conserve And Manage?

There are many reasons to conserve and manage this precious resource. They include but are surely not limited to:

- **Oxygen Production:** Forests are a major source of oxygen production, which makes us all breathe much easier.
- Riparian Forest Buffers: Forests along streams and rivers
 reduce the amount of sediment and excess nutrient run off by
 trapping and absorbing these pollutants as they move through the
 landscape.
- **Flood Control:** Forests can soak up nearly eight inches of rain per hour helping to reduce runoff and therefore lessening the frequency and severity of flooding and its effects.
- Groundwater Recharge: Through the absorption of rainfall, the forests help recharge groundwater by slowly releasing it into streams and underground aquifers.
- Wildlife Habitat: There are hundreds of animals that make the forest their home, including mammals, amphibians, reptiles, fish, insects and birds. Not only do they rely on this ecosystem for shelter but also for food, water and nesting areas.
- Wood Resources: Of course all of us come in contact with some type of wood product everyday. Without managing our forests we could endanger our ability to utilize this resource for homes, furniture, the daily newspaper, craft projects or even that cozy crackling fire in winter.
- Scenic Beauty: Often overlooked is the aesthetic value of our forests. You most likely have enjoyed the scent of the spring forest with its beautiful flowers or certainly marveled at the brilliant colors of the leaves in autumn.

- **Recreational Opportunities:** There are many recreational opportunities in the forest such as hiking, camping, hunting, bird watching and photography, just to name a few.
- **Generations to Come:** Lastly, let us not forget that our generation is only here for a short time. It is imperative that we manage these lands to insure their long-term viability for future generations.

What Is A Forest?

A forest is a vegetation community dominated by trees and other woody shrubs, growing close enough together that the tree tops touch or overlap, creating various degrees of shade on the forest floor. Many factors will influence the type of forest that will develop or will be able to grow. These include elevation, topography, hydrology, soil and climate.

Two areas support different types of forests within Howard County. The first area is called the Piedmont Plateau and involves roughly 90% of the land area of Howard County. This area is an older upland consisting of rolling hills with stream valleys. Forest plant species typically found in this area include white oak, red oak, redbud, sassafras, mountain laurel and spicebush.

The second area is called the Coastal Plain, and it is generally located in eastern Howard County between the Anne Arundel County line and I-95. The soils consist largely of sand and gravel, most likely from the glaciated areas of Pennsylvania. Common plant species in this area are sweet gum, willow oak, pin oak, Virginia pine, greenbriar and blueberry.

Forest Communities

There are many different types of forests. In general, the "type" of forest is determined by describing the groups or communities of trees, shrubs and herbaceous plants frequently found growing together. Typically, the dominant tree species in an area are used to name this association, for example oak/hickory.

It is important to understand the different forest communities because each area will support different plants and animals and provide different benefits. Protection measures and threats to forest health will vary from one community to the next.

Forest Structure

The structure refers to the vertical layers that make up a forest. They are the canopy, understory and ground cover. At the top is the canopy, which is the trees you see when you look up. This layer has the tallest



trees and provides shade for the other layers below. Underneath the canopy is the vegetation that makes up the understory. In this area you will find small trees and shrubs that are generally shade tolerant. The understory height can vary but usually is between three feet up to the canopy. At the bottom is the ground cover. This

area is the vegetation closest to the ground. It includes wildflowers, grasses, herbs, ferns, mosses and other plants. This layer can be negatively affected or even destroyed by non-native invasive plant species. Examples of these plants species include Japanese honeysuckle, stilt grass, garlic mustard, English ivy and periwinkle. These plants are so aggressive that they easily become dominant and kill native species, creating habitat that is not suitable for wildlife.

Forest Succession

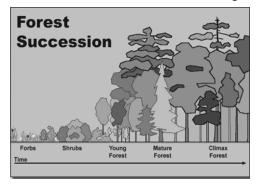
Forests are created naturally through a process called natural succession. However, this process is often disrupted through natural and unnatural disturbances. Hurricanes, tornadoes and lightning strikes can keep an area from succeeding into a forest. However, farming and development have a greater impact because the land is never allowed to revert back to a forest. Resource managers and landowners often plant trees and shrubs to help jump-start the succession process. Whether natural or influenced by humans, all forests go through successional stages of growth. The five stages of forest growth are as follows:

• The first is the **Forbs stage**, which takes place from 0-5 years. Forbs are plants that include grasses and wildflowers. You may also see mosses, lichens, small shrubs and tree seedlings.

Fertile soil begins to develop from the organic matter "humus" or "duff" from the decaying vegetation on top of the mineral soil.

 The Shrub stage ranges from 6-25 years and includes established trees and large shrubs. Many of the herbaceous plants will begin to diminish due to the lack of available light.

Tree species may often include pines, cedars and other "pioneer" plants. Pioneer plants are the plants that first become established from seeds that are blown in by the



wind or brought in by wildlife. This stage may have thousands of seedlings per acre.

- The **Young Forest stage** is from 26-50 years. The canopy begins to form with deciduous trees being dominant. Tulip poplars, ash and maple are often prevalent. Herbaceous plants and shrubs continue to decrease. The forest floor continues to form and now has a mat of leaves and other woody debris covering the ground. Less dominant trees begin to die and the number of trees can drop to several hundred per acre.
- The Mature Forest stage has large hardwood trees dominating the site. Species often found include white and red oaks, beech and hickory. The understory consists of small trees and shrubs that may grow to reach the bottom of the canopy. When larger trees die, other plants take advantage of the light created by the opening. This stage grows from 51-150 years.
- In the **Climax Forest stage** trees continue to grow in height and diameter. There are fewer trees in the forest because the dominant trees have out-competed the weaker ones. This stage is basically a larger version of the mature forest but with fewer

trees. Dead standing trees called "snags" are present and the forest floor has a well-defined humus layer. There may be as few as 100 trees per acre. This stage of development is not known to exist in Howard County.

How To Manage Your Forest

Contact the Department of Recreation and Parks, Natural Resources Division or other forestry professional for assistance. They can help you determine the type of forest you have and make recommendations for managing your forest conservation area.

The Trees

Identify the trees and confirm they are native to the area.
 Remove any trees that are considered exotic and invasive.
 NOTE: This process should take place only under the direction of the Howard County Department of Recreation and Parks,
 Natural Resources Division or other forestry professional. Do

not remove any vegetation until a plan has been established.

- In areas lacking vegetation, add only native species that are suitable to the area. Native plants are those that grow naturally in the local growing condition.
- If they do not pose a threat, dead trees "snags" shall remain standing because they are utilized by many species of insects, birds and mammals for food and shelter.
- When openings are created in the canopy by trees naturally dying or storm events blowing them over, assist the closure through planting. Encourage native seedling growth by keeping

competition from other plants away. When openings occur, more sunlight will hit the forest floor, which increases the likelihood of the establishment of invasive species. Measures should be taken to insure invasive plant species do not become established and overtake the native plants. This is of great concern because many of these invasive plant seeds are in the soil just waiting for the right conditions to grow. When light is available and competition has been reduced these invasive plants will quickly become established.

 In areas where the canopy, understory and ground cover are missing or lacking, try to recreate them through referring to the "type classifications." If you cannot match your forest to a particular "type," consult a forest professional for guidance and attempt to duplicate it.



Forest Lacking Understory

The Ground

- Insure that all bare ground is covered with plants or leaf litter creating the humus layer. However, do not continually place leaves in one particular area. Apply just long enough to insure that the ground will be stable and allow forest plants to regenerate. By regularly dumping in one location you will smother the plants and they will never get established. The humus layer continues to build up from leaf litter and woody debris causing a sponge effect, which absorbs precipitation and assists in recharging our ground water. It also traps excess nutrients, which are then utilized by the forest. This duff layer is one of the most important factors in creating a properly functioning forest ecosystem.
- Branches, woody debris and leaves should be left on site and in a
 natural state, preferably where they have fallen. Do not make
 piles throughout the site. As these materials decompose they add
 nutrients back to the soil, supplying nourishment that keeps the

other plants growing. Keep in mind that composting is a technique that the forest has utilized since the beginning of time to use the biomass that it creates, to feed itself. Dumping large piles in concentrated areas disrupts this process and can prevent the regeneration of plants needed to insure the sustainability of the forest cycle.

• Do not remove fallen trees or forest litter for the same reasons



listed above. They also create rich moist habitat for many forest wildlife like salamanders, frogs and insects.

- When creating trails be sure to follow the natural contours and be aware of areas of concern such as sensitive or endangered plants, wetlands and steep slopes.
- Repair any erosion through light re-grading. Do not import fill
 from other sites. Utilize brush and rocks to disperse water runoff
 away from the area of concern. Cover the area with leaf litter
 and add native trees and shrubs if needed.
- Be sure to allow seedlings to grow. They are the future of the forest. As one tree dies there should be others waiting to continue growing and take its place.

Reforestation

Not all forest conservation easements are mature forests; many of them have been newly created through planting or allowing an area to naturally succeed, letting nature create them. However, in Howard County due to the everincreasing pressures from invasive plant species and deer populations, natural succession is rarely successful. When a new forest is created, planners evaluate criteria such as soils, hydrology, drainage, topography and other factors to insure the long-term survival of the planting. From this evaluation a variety of



native trees and shrubs are selected and installed to recreate a young forest.

How Do I Manage A Newly Planted Forest?

Managing a newly planted forest is similar to managing a mature forest and many of the techniques are interchangeable. However, these areas require added considerations that should be supervised by a forestry professional. Some of the maintenance activities listed below may actually harm newly planted forests if not preformed properly.

- In newly planted forests it is imperative that invasive species are controlled. If they are allowed to overtake the trees, chances for survival are greatly diminished. There are many techniques that will help in controlling them including manual removal, herbicide application and periodic mowing.
- It is important that the site is not mowed on a regular basis or mowed in a way that will damage or disturb the trees' growth. Too often, good intentions lead to the demise of the newly planted forest. Young trees are fragile and require added care when maintaining them. Mowers and weed eaters are often the reason for not surviving. These tools must be used in a way to insure they don't come in contact with the tree and cause a wound.
- Wildlife can also play a major role in the success of a new forest.
 Animals like deer, voles, mice and rabbits cause damage just like the mowers. This damage often causes



the death of the plant. The installation of tree shelters or vole/mole guards will keep animals from coming in contact with the trees and help to insure the trees' survival. This technique helps to keep animals from reaching the trees so they don't feed on and cause damage to them. In most instances these measures will help in reducing damage. However, if populations become too high, other measures may be needed to reduce populations.

Violations

- Certain activities within the forest conservation areas are illegal.
 Some common violations include clearing, building structures such as sheds and fences, formal landscapes and all-terrain vehicle use. Forest conservation easements are not for this type of use and will result in the destruction of the forest system.
- Some larger forest conservation easements are covered by Forest Management Agreements, which specify what is allowed within the easement.
- To report a violation, contact the Department of Recreation and Parks, Natural Resources Division at 410-313-4725. They are responsible for following up on violations against forest conservation easements. Natural Resources enforcement staff will investigate and determine the course of action needed. All violations require restoration of the area and may include fines and/or court action.

Summary

Our forest resources affect everyone. Whether public or private it is imperative that we care for and manage them. We are all directly connected to our forests. As the caretakers of them it is our

responsibility to conserve these resources not only for our survival but also for the many creatures we share it with. Together, through our combined efforts in managing and protecting these fragile resources, we will insure they will be viable for many generations to come.



For More Information

It would be helpful to learn about the specifics of the forest you care for. A field guide of the eastern forests will help you identify tree and shrub species. You can also contact the Department of Recreation and Parks Natural Resources Division for guidance on managing your forest conservation area.

For more information on this topic the following organizations may be helpful.

- Department of Recreation and Parks, Natural Resources Division 410-313-4725
 - www.co.ho.md.us/RAP
- Maryland Native Plant Society www.mdflora.org/
- Maryland Department of Natural Resources Forest Service www.dnr.state.md.us
- Maryland Forests Association, Inc. www.md.forests.org

Helpful Guides and Books:

Woody Plants of Maryland, Brown and Brown. 1972 University of Maryland

<u>Eastern Forests</u>, Audubon Society Nature Guide Sutton. 1985. Knopf.

Field Guide to North American Trees, National Audubon Society. 1998. Knopf.

Native Plants for Wildlife Habitat and Conservation Landscaping, U.S. Fish and Wildlife Service www.nps.gov/plants/pubs/chesapeake/

The Howard County DEPARTMENT OF RECREATION & PARKS

presents the Environmental Education Series

One of the goals of the Department of Recreation and Parks is to preserve a balance of ecological, natural and environmental values on Natural Resources land throughout the County. We strive to manage these areas in a way that will preserve their ecological integrity while making them available to the public for passive recreational use. A key element in our management plan is public awareness and education. This brochure is one in a series of publications designed to educate the public on matters related to the conservation and preservation of our environment.

To help accomplish this goal, our staff is available to speak with various civic and community organizations and to assist with the planning and implementation of projects such as habitat enhancement, reforestation, stream walks, water quality monitoring, etc. It is our firm belief that only by working together can we fulfill the moral and civic responsibility with which we have all been charged, the stewardship of the land. For further information call 410-313-4725.





Written and produced by Department of Recreation and Parks Natural Resources Division

